**REMARKS**

The April 18, 2006 Official Action and the references cited therein have been carefully reviewed. In view of the amendments presented herewith, the Declaration under 37 C.F.R. §1.132 and the following remarks, favorable reconsideration and allowance of this application are respectfully requested.

At the outset, Applicants note that the Examiner has deemed the restriction requirement final. Accordingly, claims 1-5, 25-28, 33 and 34 are being examined on the merits and claims 6-24 and 29-32 have been withdrawn from consideration. However, as indicated in Applicant's last response, according to §821.04 of the MPEP, "if applicants elects claims directed to the product, a product claim is subsequently found allowable, withdrawn process claims which depend from, or otherwise include all of the limitations of the allowable product claim will be rejoined. Accordingly, Applicants again request that the method claims be rejoined with any allowable product claims.

Applicants filed an Information Disclosure Statement on March 22, 2006. The Examiner is requested to acknowledge receipt of this submission and to indicate that the references provided have been considered in the present application.

The Examiner has objected to Figure 3 and requires Applicants correct the Figure. An amended Figure 3 is submitted herewith which clearly reflects the differences between the African and Caucasian populations studied.

At page 3 of the Official Action, the Examiner has rejected claims 1-5, 25-28, 33 and 34 under 35 U.S.C. §112, first paragraph as allegedly failing to comply with the enablement requirement of the statute. The Examiner has further rejected these claims, asserting that the subject matter encompassed thereby was not described in such a way as to reasonably convey

that the inventor was in possession of the invention at the time the application was filed.

The Examiner has rejected claim 2 under 35 U.S.C. §102(b) as allegedly anticipated by GeneBank Accession No. Y12377.

At page 16 of the Official Action, the Examiner has further rejected claim 2 and also rejected claim 33 as allegedly anticipated by US Patent 5,474,796 to Brennan et al.

Applicants respectfully submit that the claims as presently amended are in condition for allowance. Each of the above-noted objections and rejections under 35 U.S.C. §112, first paragraph and §102 is, therefore, respectfully traversed.

**CLAIMS 1-5, 25-28, 33 AND 34 AS AMENDED ARE COMPLIANT WITH THE ENABLEMENT AND WRITTEN DESCRIPTION REQUIREMENTS OF 35 U.S.C.§112, FIRST PARAGRAPH**

**A. Enablement**

The Examiner has rejected the aforementioned claims asserting that the specification fails to enable the practice of the present invention. Applicant respectfully disagrees.

At the outset, Applicant notes that the sequence of SEQ ID NO: 1 is provided in the specification, and thus, the Examiner's contention that practice of the present invention as encompassed by claim 1 would require undue experimentation is clearly in error.

A rejection under 35 U.S.C. §112, first paragraph, based on inadequate enablement is proper only when the rejected claim(s) is (are) of such breadth as to read on subject matter to which the specification is not enabling. In re Borkowski, 164 U.S.P.Q. 642 (CCPA 1970). Moreover, it is settled law that whenever the

adequacy of enablement provided by an applicant's specification is challenged, the PTO has the initial burden of giving reasons, supported by the record as a whole, why the specification is not enabling. In re Armbruster, 185 U.S.P.Q. 152 (CCPA 1975). Indeed, a properly supported showing that the disclosure entails undue experimentation is part of the PTO's initial burden under §112, first paragraph. In re Angstadt, 190 U.S.P.Q. 214 (CCPA 1976).

Claim 2 as amended recites a sequence which is fully complementary to SEQ ID NO: 1 and accordingly, no longer reads on any variant sequence.

At page 5 of the Official Action, the Examiner has emphasized that Applicant's sequence contains two changes with respect to that published in GeneBank Accession No. Y12377 and thus concludes that the state of the art is unpredictable. Applicant respectfully submits that he has sequenced the DNA of over 100 patients and has consistently observed a "G" at position 70. This "G" was present in all samples of DNA sequenced whereas the "CT allele" at position 69 was found to vary. Accordingly, Applicants submits that there is a sequencing error in Y12377 at position 70. A Declaration under 37 C.F.R. 1.132 is submitted herewith in support of Applicant's position.

The Examiner also contends that Applicants have not taught any studies associating the particular SNP with the detection of cancer. Applicant respectfully disagrees. Example III of the present specification describes the genotyping analysis upon which the present invention is based. Specifically, Table 3 provides results indicating that the presence of the C-allele in the *FGF-3* gene 5' untranslated region is correlated with greater susceptibility to esophageal cancer. Additionally, the effect is dose-dependent, i.e., a

subject who is homozygous for the C-allele *FGF-3* gene has a higher risk of developing esophageal cancer relative to subjects who are heterozygous (C-T). Finally, heterozygous individuals are at a greater risk than subjects who are homozygous for the T-allele at this position in the *FGF-3* gene. Given these results, it is clear that detection of the SNP is provides an indication of an individual's susceptibility to cancer, particularly, esophageal cancer.

The Examiner also takes exception to the recitation of mammal in the claims. The claims have been amended to replace the term mammal with human, thereby eliminating this grounds of objection.

**B. Written Description**

The Examiner contends that the subject matter of claims 1-5, 25-28, 33 and 34 was not described in the specification in such as way as to convey to the skilled person that the inventors were in possession of the invention.

Written description can be satisfied through disclosure of relevant identifying characteristics, i.e., structure, or other physical and/or chemical characteristics, functional characteristics when coupled with a known or disclosed correlation between function and structure, or some combination of such characteristics. What is well known in the art, need not be disclosed. If a skilled artisan would have understood the inventor to be in possession of the claimed invention at the time of filing, (even if it were asserted that every nuance of the claim is not explicitly described in the specification), then the adequate description requirement is met. Chisum on Patents §7.04[1][c].

Notably, the sequence of the FG3 gene containing the polymorphism associated with cancer susceptibility is provided in the specification. Applicant respectfully submits that the provision of the sequence and the SNP present therein provide a full written description of the invention. Nothing further is required under 35 U.S.C. §112, first paragraph.

Claim 25 has been amended to recite the particular probes and primer sequences to be used in the kit. Again, it is respectfully submitted that the skilled person would readily appreciate that the present inventor was in possession of the invention presently claimed as of the filing date of this application.

At page 11 of the Official Action, the Examiner contends that the present claims encompass variants and fragments of SEQ ID NO: 1. Applicant respectfully submit that the present claims as amended no longer read on such variants and fragments.

In light of the foregoing claim amendments, remarks and the attached Declaration, Applicant submits that the rejection of the claims under 35 U.S.C. §112, first paragraph is untenable and request its withdrawal.

**THE PRESENT INVENTION IS NOVEL OVER GENEBANK ACCESSION NO: Y12377 AND US PATENT 5,474,796**

The Examiner has rejected claim 2 under 35 U.S.C. §102(b) as allegedly anticipated by GeneBank Accession No. Y12377.

In order to constitute evidence of lack of novelty under 35 U.S.C. §102(b), a prior art reference must identically disclose each and every element of the rejected claim. In re Bond, 15 U.S.P.Q.2d 1566 (Fed. Cir. 1990). Claim 2 has been amended to recite that the nucleic acid molecule encompassed by the claim is fully complementary to SEQ ID NO: 1. As the Examiner

acknowledges in the present Official Action, SEQ ID NO: 1 is not identical to the sequence disclosed in Y12377. Accordingly, the anticipation rejection of this claim is inappropriate and should be withdrawn.

The Examiner has further rejected claim 2 and additionally rejected claim 33 under 35 U.S.C. §102(b) as allegedly anticipated by the '796 patent to Brennan et al. It is respectfully submitted that the amendment to claim 2 overcomes this rejection.

Claim 33 has been amended to recite the probes of SEQ ID NOS: 6 and 7. Thus, Applicants submit that Brennan et al. do not disclose an identical microarray to that presently being claimed. Nowhere do Brennan et al. teach a microarray for detecting a SNP in the untranslated region of the FG3 gene for the detection of cancer susceptibility. Inasmuch as it is a well-settled premise of patent law that an ambiguous reference will not support an anticipation rejection, In re Hughes, 145 U.S.P.Q. 467 (CCPA, 1965), Applicant submits that the rejection of claim 33 based on Brennan et al. cannot stand.

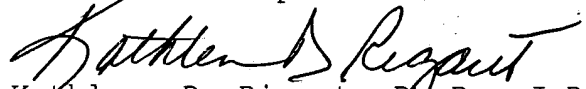
**CONCLUSION**

In view of the amendments presented herein and the foregoing remarks, it is respectfully urged that the rejection set forth in the April 18, 2006 Official Action be withdrawn and that this application be passed to issue.

In the event that the Examiner is not persuaded as to the allowability of any claim, and it appears that any outstanding

issue may be resolved through a telephone interview, the Examiner is requested to contact the undersigned attorney at the phone number given below.

Respectfully submitted,
DANN, DORFMAN, HERRELL AND SKILLMAN
A Professional Corporation

By 
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Enclosure: Declaration by Dr. Guo